

STATE OF NEW HAMPSHIRE
PUBLIC UTILITIES COMMISSION

DOCKET DE 04-177

IN THE MATTER OF: Public Service Company of New Hampshire,
Transition Energy Service Rates

DIRECT TESTIMONY

OF

Maureen L. Sirois
Utility Analyst III

Regarding the Return on Equity for
Public Service Company of New Hampshire's Generation Assets

April 20, 2005

1 **Introduction**

2 **Q Please state your full name?**

3 A My name is Maureen L. Sirois.

4 **Q By whom are you employed and what is your business address?**

5 A I am employed as a Utility Analyst III, in the Electric Division of the New Hampshire
6 Public Utilities Commission (the Commission). My business address is 21 South
7 Fruit St., Suite 10, Concord, NH, 03301.

8 **Q Please summarize your education and professional work experience.**

9 A I received a Bachelor of Arts degree in Economics from the University of Maine at
10 Orono, Maine in 1996. In 1998, I received a Master of Arts Degree in Economics
11 from the University of New Hampshire in Durham, New Hampshire. I am currently
12 working on a Doctorate of Philosophy in Economics at the University of New
13 Hampshire and received candidacy status in 2002. I joined the Commission in 2001
14 as an Economist II.

15 **Q What is the purpose of your testimony in this proceeding?**

16 A The purpose of my testimony is to provide, for transition energy service rate making
17 purposes, a rate of return on equity recommendation for Public Service Company of
18 New Hampshire's (PSNH or the Company) generation assets according to the
19 standards set forth in *Bluefield Water Works v. PSC*, 262 U.S. 679, 692-93 (1923)
20 (*Bluefield*) and *FPC v. Hope Natural Gas Co.*, 320 U.S. 591, 605 (1944) (*Hope*). In
21 *Hope* and *Bluefield*, the U.S. Supreme Court set the standard that a public utility may
22 be allowed to earn a return comparable to a return on investments in other enterprises
23 having similar risks that allows the utility the opportunity to attract capital and to

1 maintain its credit. In *Conservation Law Foundation of New England, Inc. v.*
2 *Consumer Advocate*, 127 N.H. 606, 507 A.2d 652, the New Hampshire Supreme
3 Court supports the basic principle that a utility has the opportunity to make a profit on
4 its investment.

5 **Q What rate of return on equity is the Company requesting?**

6 A The Company is requesting a return on equity of 11.4 percent.

7 **Q What rate of return on equity is the Company currently allowed to earn on its**
8 **generation assets?**

9 A On November 6, 1997, the Commission issued Order No. 22,784 (DR 97-059)
10 granting the Company an allowed rate of return on equity of 11.0 percent for the
11 purpose of setting temporary rates. Although this order applied to temporary rates,
12 this rate of return on equity was also used in the underlying schedules supporting the
13 Agreement to Settle PSNH Restructuring approved by the Commission in DE 99-099.

14 **Q What do you recommend as the allowed return on equity for PSNH's generation**
15 **assets?**

16 A Staff recommends an allowed return on equity of 9.08 percent.

17 **Q How is your testimony organized?**

18 A My testimony is organized into four sections. In Section I, I compare current
19 economic and monetary conditions and their effect on the return on equity to the
20 conditions that existed at the time PSNH's temporary rates were established in DR
21 97-059 and during the subsequent Restructuring Settlement proceeding in DE 99-099
22 to demonstrate that the 11.4 percent return on equity proposed by the Company is too
23 high considering today's economic conditions and low interest rate environment. In

1 Section II, I describe the methodology I apply to estimate my rate of return on equity
2 recommendation for PSNH's generation plants. Then, in Section III, I compare and
3 contrast my methodology and recommendations with those of the Company's witness
4 Dr. Roger A. Morin. In Section IV, I summarize my recommendations.

5 **Section I: The Economic and Financial Environment**

6 **Q What relevance do economic and financial conditions have in this proceeding?**

7 A Investors consider both economic and monetary conditions when assessing the
8 opportunity costs of their investment. For instance, investors respond to changing
9 assessments of risk and financial prospects by changing their willingness to pay for a
10 security. During times of uncertainty, investors are less willing to invest in high-risk
11 equity. As a result, the lower demand for high-risk equity causes prices to fall,
12 increasing dividend yield and the return on equity. Meanwhile, investors seek less
13 risky equity, such as electric utility stocks, thereby increasing the value of those
14 stocks and decreasing the expected return on equity.¹ Currently, the economy is
15 growing at a steady pace; however, high oil and natural gas prices and the
16 uncertainties associated with the war in Iraq appear to be lowering investors'
17 expected rate of returns. Moreover, investors are attracted to safer equity, such as
18 equity offered by electric utilities.

19 Macroeconomic conditions and capital markets are also relevant because they
20 affect the variables that intervenors use to assess returns on equity, such as stock

¹ The S&P Electric Utilities Index was up 19.6 percent in 2004, compared with gains of 9.0 percent for the S&P 500 Composite Stock Index and 10.0 percent for the S&P 1500 Super Composite Stock Index. These trends reflect an investor shift to the utility sectors, which is considered a safer alternative to the broader market due to the uncertainties created by the increase in oil prices. McCann, Justin C. *Industry Surveys, Electric Utilities*, Standard & Poor's, February 17, 2005, page 5.

1 prices, interest rates and dividend growth. Moreover, it is important to put the
2 Company's currently allowed rate of return on equity in an historical context since it
3 was set in 1997 and its use was continued through the PSNH Restructuring
4 Settlement proceeding in 1999 and 2000.

5 **Q How have economic conditions changed since 1997?**

6 A During the Company's temporary rate case in 1997, the nation experienced an
7 economic peak, during which inflation and unemployment were at moderate levels
8 and interest rates were high. Currently, the economy is recovering from the
9 recession, which started in March 2001 and ended in March 2002.² The annual
10 growth rate of the national economy, as measured by the rate of change in the Real
11 Gross Domestic Product (Real GDP), has increased in recent years to 4.4 percent in
12 2004. Inflation, as measured by the rate of change in the Consumer Price Index
13 (CPI), has increased slightly over the past year and remains at moderate levels. The
14 national unemployment rate has decreased gradually from highs set in 2003.
15 However, the national unemployment rate is still higher than it was in 1997 and 2000.
16 In fact, participation in the labor force has decreased, which is evidenced by a current
17 employment to population ratio that is lower than 1997 and 2000. Since the economy
18 is still recovering from the last recession, investors will most likely be attracted to
19 less risky equity, such as equity offered by utilities.

² "The NBER's Business-Cycle Dating Procedure" June 7, 2002, National Bureau of Economic Research,
<http://www.nber.org>

Table 1: Historical Economic Trends (Percent Change from Previous Period)³

	1997	1998	1999	2000	2001	2002	2003	2004
Real GDP	4.5	4.2	4.5	3.7	0.8	1.9	3.0	4.4
CPI*	2.3	1.6	2.2	3.4	2.8	1.6	2.3	2.7
Unemployment Rate	4.9	4.5	4.2	4.0	4.7	5.8	6.0	5.5
Employment Population Ratio	63.8	64.1	64.3	64.4	63.7	62.7	62.3	62.3

*Not seasonally adjusted.

Q How has the New Hampshire economy fared compared to the national economy since 1997?

A As the national employment rate decreased during the recession of 2001, New Hampshire's employment rate also decreased but remained higher than the national average.

Table 2: Employment Rates for the U.S. and New Hampshire (Percent)⁴

	1997	1998	1999	2000	2001	2002	2003	2004
New Hampshire	96.88	97.09	97.29	97.23	96.48	95.29	95.72	96.25
United States	95.06	95.49	95.78	96.01	95.27	94.22	94.01	94.47

Not Seasonally Adjusted

Furthermore, other indicators show that New Hampshire's economy has fared better than the national economy since the last recession of 2001 to 2002. On December 15, 2004, the Bureau of Economic Analysis (BEA) issued a press release stating that New Hampshire's gross state product increased by 5.6 percent from 2002

³ *Economic Indicators*, March 2005, Prepared for the Joint Economic Committee by the Council of Economic Advisors, 109th Congress, 1st Session.

⁴ Economic & Labor Market Information Bureau, New Hampshire Employment Security <http://nhnetwork.virtuallmi.com>.

1 to 2003; this is greater than the 4.5 percent growth rate of the national gross domestic
2 product. (See Attachment MLS-1) On March 28, 2005, the BEA issued an additional
3 press release stating that New Hampshire ranked sixth in per capita income out of the
4 50 states in 2004. (See Attachment MLS-2)

5 **Q How does this affect the Company's cost of capital?**

6 A In general, investors are aware of current regional and national economic conditions
7 knowing that the Company operates in New Hampshire where economic indicators
8 suggest the local economy is out-performing the national economy. Investors would
9 likely associate New Hampshire's economy with reduced risk when comparing a
10 similar company located elsewhere, all else equal.

11 **Q How have financial conditions changed since the late 1990s?**

12 A From 1997 to 2003, interest rates fell to historical lows. Since 2003, interest rates
13 have slowly increased. After a period in which the Federal Reserve Bank's Open
14 Market Committee (Federal Reserve) decreased the federal funds rate to encourage
15 investment and spending, the Federal Reserve has been gradually increasing the
16 Federal Funds Rate since January of last year when the rate was at one percent.

1

2 **Table 3: Interest Rates and Bond Yields⁵**

	1997	1998	1999	2000	2001	2002	2003	2004	Change in basis points since 1997
3 Month Treasury Bills	5.20	4.91	4.78	6.00	3.48	1.64	1.03	1.40	-380
3 Year Treasury Bonds	6.10	5.14	5.49	6.22	4.09	3.10	2.10	2.78	-332
10 Year Treasury Bonds	6.35	5.26	5.65	6.03	5.02	4.61	4.01	4.27	-208
Corporate AAA Bonds (Moody's)	7.27	6.53	7.05	7.62	7.08	6.49	5.66	5.63	-164
Prime Rate charged by banks	8.44	8.35	8.00	9.23	6.91	4.67	4.12	4.34	-410
Federal Funds Rate	5.46	5.35	4.97	6.24	3.88	1.67	1.13	1.35	-411

3

4 The table above shows how significantly interest rates have changed since PSNH's
5 allowed rate of return on equity of 11 percent was originally approved by the
6 Commission in PSNH's temporary rate case in 1997 and incorporated in the PSNH
7 Restructuring Settlement proceeding in 1999 and 2000. For instance, in 2004 the
8 average yield on the 3 Month Treasury bill is 1.40 percent, approximately four times
9 less than in 2000 when the yield was 6.0 percent.

10 **Q What are economic and financial expectations for the near future?**

11 A Real GDP is expected to increase by 3.7 percent during the first quarter of 2005 and
12 remain at these levels throughout this summer. According to *Blue Chip Economic*
13 *Indicators*, these Real GDP forecasts are higher than previously expected due to
14 increased optimism about the pace of business investment, corporate profits and
15 residential construction. Over the next year, inflation is expected to remain constant,

⁵ Source: www.federalreserve.gov

1 while the unemployment rate is expected to decrease. The yield on both the 3 Month
 2 Treasury bill and the 10 Year Treasury bond are expected to increase over the next
 3 year.

4 **Table 4: Blue Chip Consensus Forecasts⁶**

	1Q 05	2Q 05	3Q 05	4Q 05	1Q 06	2Q 06	3Q 06	4Q 06
Real GDP	3.7	3.6	3.6	3.4	3.3	3.3	3.3	3.3
CPI	2.0	2.3	2.2	2.3	2.3	2.4	2.4	2.4
Unemployment Rate	5.3	5.2	5.2	5.1	5.1	5.1	5.1	5.1
3 Month T-Bill Yield	2.6	3.0	3.3	3.6	3.7	3.9	4.0	4.1
10 Year T-Bond Yield	4.3	4.5	4.7	4.9	5.1	5.2	5.3	5.3

5 Percent change from prior quarter at annualized rates.

6 **Q What relevance do economic and financial conditions have in this proceeding?**

7 A Historical and expected trends in economic and financial conditions are relevant
 8 because they help put in context previously allowed rates of return on equity. They
 9 also show that the rate of return on equity approved by the Commission in 1997 and
 10 incorporated in the DE 99-099 Settlement Agreement proceeding was set in a very
 11 different economic climate and is not appropriate today. During 1997 and 2000,
 12 interest rates were high and the nation was experiencing an economic boom. In
 13 contrast, today's economy is slowly recovering from a recession. Even though recent
 14 increases in the federal funds rate are viewed as temporary, interest rates are expected
 15 to increase.

16 **Section II: Allowed Return on Common Equity**

17 **Q What is the return on equity?**

18 A In general, the return on equity is the return investors expect when they purchase
 19 equity shares of a particular company. It reflects the riskiness of that investment in

⁶ *Blue Chip Economic Indicators*, March 10, 2005, Aspen Publishers, Kansas City, MO.

1 light of alternative opportunities and equals the investor's current opportunity cost of
2 investing in the securities of that company. In this testimony, I estimate the
3 Company's return on equity by applying a Three-Stage Discounted Cash Flow (DCF)
4 methodology to a sample of comparable risk companies.

5 **Q Which companies are included in your sample and what criteria do you apply?**

6 A To compile a sample of comparable risk companies, I begin with companies listed in
7 the Value Line Investment Survey Electric Utilities Eastern, Central and Western
8 Industry databases. First, I include companies that pay dividends to stockholders and
9 that investors consider financially healthy. Specifically, I include companies with
10 positive forecasts of dividends per share (DPS) and earnings per share (EPS) growth
11 rates over the next five years and positive historical DPS and EPS growth rates over
12 the past five years. I also require my sample companies to have a Standard & Poor's
13 (S&P) credit rating equal to or greater than BBB because PSNH's credit rating is
14 BBB+.

15 Next, I include companies that are not involved in acquisition activities. This
16 criterion excludes Public Service Enterprise Group because it has agreed to be
17 acquired by Exelon. I also require that companies in my sample must not be
18 undergoing investigations by the Securities and Exchange Commission (SEC). For
19 this reason, I exclude First Energy (FE) and DPL, Inc (DPL).

20 **Q Why do you exclude companies involved in recent merger and acquisitions**
21 **activities?**

22 A I exclude any companies involved in recent merger activities because the market
23 values firms involved in merger activity differently and the difference would be

1 reflected in a company's stock price, therefore, affecting the company's estimated
2 rate of return on equity.

3 **Q Why do you exclude companies currently investigated by the SEC?**

4 A I exclude companies, such as FE and DPL, that are being investigated by the SEC
5 because investors would likely view these companies as having more risk than my
6 sample group. FE, which I exclude from my sample, is the subject of an SEC
7 investigation into its 2003 earnings restatement and disclosure about the outage of its
8 Davis-Besse nuclear power plant from 2002 to 2004. DPL, which I exclude, is also
9 the subject of an SEC investigation, where former top executives are being
10 investigated for securities fraud.

11 **Q Why do you require that a majority of a company's operational revenues must**
12 **be from regulated electric operations?**

13 A Since I am estimating the return on equity for PSNH's generation assets, I further
14 restrict my sample to regulated electric utilities that own generation assets.
15 Companies in my sample must have at least 60 percent of their revenues from
16 regulated electric operations, as is the case for Northeast Utilities (NU). Given that
17 PSNH also provides 80 percent of its load from its own generation plants, my sample
18 companies must acquire a majority of wholesale electric power from their own
19 generation plants. As a result, I exclude NSTAR. My sample includes Central
20 Vermont Public Service (CV), Florida Power & Light Group (FPL), Green Mountain
21 Power (GMP), PPL Corp. (PPL), Southern Co. (SO), Entergy Corp. (ETR), MEE
22 Energy (MGEE) and Hawaiian Electric Company, Inc. (HE). (See Schedule MLS-1)
23 All of these companies, with the exception of PPL, are vertically integrated

1 companies. Although Pennsylvania has restructured its electric industry, I include
2 PPL because its affiliate, PPL Generation, owns generation and has a long term
3 contract to meet its affiliate's (PPL Electric Utilities) provider-of-last-resort service
4 needs through the end of the restructuring transition period at year-end 2009.

5 **Q What methodology do you use to derive your return on equity recommendation?**

6 A I use a Three-Stage Discounted Cash Flow (DCF) analysis to form the basis of my
7 recommendation of a 9.08 percent rate of return on equity. The Three-Stage DCF
8 analysis is an enhancement of the Single-Stage DCF model, traditionally used by
9 Staff, which recognizes that dividends and earnings do not always grow at a constant
10 rate.

11 **Q Please describe the Single-Stage DCF.**

12 A The Single-Stage DCF model is based on the dividend discount model first proposed
13 by J. B. Williams in 1938.⁷ The model is based on the premise that since cash
14 dividends are the only income from a share of stock held to infinity, the value of that
15 stock will be the present value of its stream of cash dividends, where the discount rate
16 is the market's required return. The model was modified to take into account the
17 (more common) situation where shares of stock are bought and sold, producing
18 capital gains income in addition to dividend income. In order to simplify the
19 mathematics of the model, expected future dividends are represented by applying a
20 constant growth rate to the current observable dividend. Mathematically, the present
21 value of an asset (common stock) is expressed as:

22
$$P_0 = \frac{DIV_1}{(r - g)},$$

1 where DIV_1 is the dividend payment in the time period 1 or the expected dividend, r
2 is the rate of return used by investors to discount future dividends, and g is the growth
3 rate of the dividend payment. The rate of return required by investors, r , is specified
4 as:

$$5 \quad r = \frac{DIV_1}{P_0} + g,$$

6 where DIV_1 is the expected dividend, represented by $DIV_1 = DIV_0(1 + g)$ and DIV_0 is
7 the annual dividend per share in the most recent period. Therefore, the rate of return
8 on equity capital is the sum of the dividend yield (anticipated dividend payments
9 divided by the market price) and the expected growth in dividend income.

10 **Q Please explain why you use a Three-Stage DCF model?**

11 A I employ a Three-Stage DCF model so that the growth rates of dividends and earnings
12 are allowed to change over time. The Single-Stage DCF model assumes the value of a
13 common stock can be expressed as the present value of a stream of dividends that
14 grows at the same rate into infinity. Oftentimes, however, investors expect the short
15 run growth rate of a company to differ from its long run growth rate. Moreover, my
16 application of the Three-Stage DCF model takes into account the fact that expected
17 growth rates of earnings and dividends quoted by financial publishing companies
18 reflect expectations in the short run (3 to 5 years) and are not intended to reflect
19 expectations in the long run. The Three-Stage DCF model accounts for this inherent
20 limitation in the data by assuming that dividends grow at a different rate in the long
21 run.

⁷ Williams, J. B. *The Theory of Investment Value*. 1938 Cambridge: Harvard University Press.

1

2 **Q Please describe in greater detail the Three-Stage DCF model that you apply to**
 3 **estimate the cost of equity for the Company.**

4 A The Three-Stage DCF model is represented by the following equation:

$$5 \quad PV = DIV_0 \times \sum_{i=1}^5 \frac{(1+g_1)^i}{(1+k)^i} \quad (\text{First Stage})$$

$$6 \quad + DIV_0 \times \frac{(1+g_1)^5}{(1+k)^5} \times \sum_{i=1}^5 \frac{(1+g_2)^i}{(1+k)^i} \quad (\text{Second Stage})$$

$$7 \quad + DIV_0 \times \frac{(1+g_1)^5 \times (1+g_2)^5}{(1+k)^{10}} \times \frac{1+g_3}{k-g_3} \quad (\text{Final Stage})$$

8 where PV equals present value, DIV_0 are dividends in the preceding period, g_1 , g_2 , and
 9 g_3 represent the expected growth rate in dividends in each stage, and k is the cost of
 10 equity or discount rate.⁸ I solve this equation iteratively for k using two five-year
 11 stages and then a final stage, which follows the first ten years into infinity.⁹

12 **Q Please discuss how you derive the dividend yield component of your DCF**
 13 **analysis.**

14 A The dividend yield in my DCF analysis is the annual dividends per share divided by
 15 the 30 day average daily high and low average stock price during March 2005. While
 16 ideally the most recent price of the security should be used because it represents
 17 current valuations in equity markets, I use a 30 day average in order to mitigate any
 18 irregularities in stock prices on a single day. The average dividend yield for my

⁸ Pratt, Shannon *Cost of Capital. Estimation and Applications*, 1998, New York, John Wiley & Sons, Inc., page 101.

⁹ *SBBi Valuation Edition 2004 Yearbook*, Ibbotson Associates, 2004, page 61.

1 sample is 3.84 percent and the average expected dividend yield is 3.97 percent. (See
2 Schedule MLS-2)

3 **Q Describe the growth rate component of your DCF analysis.**

4 A For the short term growth rate in my Three-Stage DCF model, I calculate 5 year and
5 10 year historical growth rates for earnings per share and dividends per share using
6 log-linear regression analysis. I also incorporate Value Line forecasts of earnings per
7 share and dividends per share growth rates over the next five years because these
8 estimates make use of historical data, market trends and current knowledge about the
9 electric industry. Using both my historical growth rates and forecasted growth rates, I
10 derive a growth rate for earnings per share and for dividends per share by applying
11 equal weighting to 5 year historical growth rates, 10 year historical growth rates and
12 the Value Line forecasts. In contrast to Dr. Morin's methodology, I give more weight
13 to historical growth rates because of the controversies associated with analysts'
14 forecasts that I will discuss later. Then I derive an overall growth rate that is a
15 weighted average of the dividends per share growth rate (75 percent) and the earnings
16 per share growth rate (25 percent). I give dividends per share growth more weight
17 than earnings per share growth because electric utility investors are concerned with
18 dividend growth but also consider earnings as an assurance that dividend growth will
19 be sustained. Moreover, dividend growth rates are more stable than earnings growth.
20 The average first-stage growth rate for my sample is 3.65 percent. (See Schedule
21 MLS-2)

22 **Q What second-stage rates do you use in the Three-Stage DCF model?**

1 A The second stage growth rate is simply the average of the growth rates in the first and
2 third stages.

3 **Q What is the third-stage growth rate and why do you use it in the final stage**
4 **growth rate in the Three-Stage DCF model?**

5 A For the final stage, I use a growth rate of 5.5 percent from the 11th year to infinity.
6 The 5.5 percent figure represents the long run growth of the economy adjusted for
7 inflation (Real GDP of 3.5 percent and inflation of 2 percent) which is supported by
8 the financial community. For instance, the estimated long run Real GDP growth rate
9 of 3 to 3.5 percent was also presented at a symposium held by the Federal Reserve
10 Bank of Kansas City.¹⁰ I further support this estimate by calculating average Real
11 GDP from 1930 to 2004 which is 3.6 percent.

12 **Q What is the rate of return on equity that you calculate using the Three-Stage DCF**
13 **model?**

14 A I derive a 9.08 percent rate of return on equity. (See Schedule MLS-3)

15 **Q Do you use any other methodologies to estimate the return on equity for the**
16 **Company?**

17 A Yes, I apply the Risk Premium method.

18 **Q Describe the Risk Premium method also used to calculate the cost of equity.**

19 A The Risk Premium method recognizes that common equity capital is more risky than
20 debt from an investor's standpoint, and that investors require higher returns on stocks

¹⁰ Hakkis, Craig S. "Economic Policy for the Information Economy – A Summary of the Bank's 2001 Economic Symposium", *Economic Review* Fourth Quarter 2001, Federal Reserve Bank of Kansas City, page 1.

1 than on bonds to be compensated for the additional risk. The cost of common equity
2 is represented by the following equation:

$$3 \quad K_e = R_f + \beta_s * RP,$$

4 where K_e is the cost of equity, R_f is the yield on risk free securities, and RP is the
5 equity risk premium demanded by shareholders to accept equity relative to debt. β_s is
6 the average beta of a group of comparable risk companies that I used to adjust the risk
7 premium to measure risks specific to electric utilities that own their own generation.
8 Note that my risk premium model is similar to Dr. Morin's Capital Asset Pricing
9 Model (CAPM) with one important exception: I use an average beta for my sample
10 while he uses a beta for the whole vertically integrated electric utility industry.

11 **Q What beta measure do you use for your sample?**

12 A I use Value Line beta estimates for the companies in my sample.

13 **Q How do you calculate the equity risk premium?**

14 A I calculate the equity risk premium by first identifying the risk-free rate. As a proxy
15 for the risk-free rate, I use the yield on the 10 Year Treasury bond and, as of April 6,
16 2005, the yield was 4.44 percent.¹¹ To calculate the expected equity risk premium, I
17 subtracted the risk-free rate from the S&P 500 market total return of 12.41 percent.¹²
18 Using the difference between the S&P 500 market total return and the current yield
19 on the 10 Year Treasury bond, I derive a risk premium of 7.97 percent. I adjust this
20 risk premium to account for specific company risk by multiplying it by each
21 company's Value Line beta. My sample's average risk premium is 5.38 percent.

¹¹ www.bloomberg.com

1 (See Schedule MLS-4) For each company in my sample, the cost of equity is the sum
2 of the risk free rate and the beta adjusted risk premium (equity risk premium
3 multiplied by my sample beta). Using the Risk Premium analysis, I calculated an
4 average return on equity of 9.82 percent. (See Schedule MLS-4)

5 **Q Why is the estimated return on equity result derived using the Risk Premium**
6 **model not included in your recommendation?**

7 A The Risk Premium model provides some valuable insight but should not be relied
8 upon. Specifically, it assumes that the risk premium is constant over time when, in
9 fact, the spread between the yield on Treasury securities and the return on equity
10 varies over the business cycle and with investors' concerns about inflation.

11 **Section IV: Comparison to Company Testimony**

12 **Q Have you reviewed the testimony of Dr. Roger A. Morin?**

13 A Yes.

14 **Q Do you believe Dr. Morin's testimony represents a fair and objective analysis of**
15 **the appropriate return on equity recommendation for PSNH's generation assets**
16 **that is 11.4 percent?**

17 A No, I do not believe that Dr. Morin's testimony represents a fair and objective
18 analysis of a reasonable rate of return on equity for PSNH's generation assets. I
19 believe that Dr. Morin makes a series of errors that artificially inflate his estimate of
20 the Company's rate of return on equity and the Commission should reject it.
21 Moreover, I believe that his 40 basis point risk premium adder to the return on equity

¹² SBBI Valuation Edition 2004 Yearbook , Ibbotson Associates, 2004, page 66.

1 to compensate investors for the risk associated with PSNH generation assets is
2 unwarranted.

3 **Q What return on equity does Morin recommend and how did he estimate this**
4 **result?**

5 Dr. Morin recommends a rate of return on equity of 11.4 percent which is based
6 on two major components. His first component reflects a rate of return on equity for
7 the vertically integrated electric utility industry which he derives by using a series of
8 samples and three types of methodologies: the Capital Asset Pricing Model (CAPM),
9 the Empirical CAPM, the Risk Premium (RP), the Allowed RP and the DCF. His
10 second component consists of what he describes as his estimate of the additional risk
11 premium of 40 basis points to account for risk associated with PSNH's electric
12 generation plants. Then he adds this 40 basis point estimate to his return on equity of
13 11 percent for a total of 11.4 percent.

14 I will begin my critique of Dr. Morin's recommendation by explaining why his
15 methodological approach inflates his estimated return on equity of 11 percent, an
16 unreasonably high result.

17 Dr. Morin conducts 16 different analyses and, as a result, produces 30 different
18 estimated rate of return on equity, ranging from 9 percent to 12.1 percent (9.2 percent
19 to 12.4 when adjusted for flotation costs). Dr. Morin then picks the "midpoint" result
20 of 11 percent rate of return on equity.

1

2 **Q Do you agree with Dr. Morin's method of picking a "midpoint" level of return**
3 **on equity?**

4 A No, I do not agree with his method because the 11 percent figure is not equivalent to
5 the 10.8 percent midpoint calculated in the table below and Dr. Morin did not identify
6 the specific weights used to derive the 11 percent result. According to Dr. Morin, he
7 did not use the 10.8 percent because he places a "slightly less weight to the DCF
8 results." (Morin Testimony: page 56, line 4) When Commission Staff asked Dr.
9 Morin to identify the specific weight assigned to the DCF results, he still did not
10 provide a specific answer. (See Attachment MLS-3, Company response to Q-STAFF-
11 017) In the table below, I derive the average and midpoint rate of return on equity
12 (with and without flotation costs) using Dr. Morin's estimates.

13

Table 5: Summary of Dr. Morin's Methodology	ROE w/o Flotation Costs	ROE w/ Flotation Costs
CAPM Risk-free rate 4.8%	11.1	11.4
CAPM Risk-free rate 5.4%	11.7	12
Empirical CAPM Risk-free rate 4.8%	11.5	11.8
Empirical CAPM Risk-free rate 5.4%	12.1	12.4
Risk Premium Electric Risk-free rate 4.8%	10.4	10.7
Risk Premium Electric Risk-free rate 5.4%	11	11.3
Risk Premium Natural Gas Risk-free rate 4.8%	10.5	10.8
Risk Premium Natural Gas Risk-free rate 5.4%	11.1	11.4
Allowed Risk Premium Risk-free rate 4.8%		10.9
Allowed Risk Premium Risk-free rate 5.4%		11.1
DCF Moody's Electric and Zachs Growth rates	9.1	9.3
DCF Moody's Electric and Value Line Growth rates	10.1	10.3
DCF Moody's Vert. Integrated Electric and Zachs Growth rates	9	9.2
DCF Moody's Vert. Integrated Electric and Value Line Growth rates	9.6	9.9
DCF Moody's Natural Gas Distribution and Zachs Growth rates	9	9.2
DCF Moody's Natural Gas Distribution and Value Line Growth rates	10	10.2
Average	10.4	10.7
Midpoint	10.5	10.8

1 *Numbers may not match due to rounding.*

2 **Q What methods does Dr. Morin use in his return on equity methodology that you**
3 **disagree with?**

4 A I disagree with Dr. Morin's inclusion of flotation costs, his forecast for the estimated
5 yield on the 30 year Treasury bond that he uses in his CAPM and RP models as the
6 risk-free rate and his heavy reliance on earnings growth estimates in his DCF models,
7 each of which serve to inflate his rate of return on equity recommendation.

8 **Q Why do you disagree with Dr. Morin's inclusion of flotation costs?**

9 A I disagree with Dr. Morin's adjustments to account for flotation costs for a series of
10 reasons. The costs associated with issuing new equity are already accounted for in a
11 company's stock price and, as a result, a flotation cost adjustment would double count
12 these costs. Specifically, companies use "underwriters" to issue equity and their fees
13 are not actual expenses for the issuing company. The underwriter accounts for these

1 transactions costs by charging the firm a price lower than the market value of the
2 equity. Investors are aware of these costs associated with the new equity because it is
3 labeled on the stock offering prospectus. Investors, who are usually brokers, are
4 aware that a portion of the stock price goes towards these fees and, as a result account
5 for those issuance costs in their risk return analysis when paying the offering price.

6 When a company issues new stock, the market value of the company's existing
7 stock tends to decrease. Dr. Morin states that for this reason investors should be
8 compensated. However, investors know that such a price fluctuation is temporary if
9 the company is financially strong. If the equity's value does not revert to its existing
10 level then it's a signal that the company is not doing well and its stock value would
11 have decreased eventually without the new equity offerings.

12 **Q What other methodologies does Dr. Morin use that you disagree with?**

13 A Dr. Morin estimates rates of return on equity for each of the following; CAPM,
14 Empirical CAPM, RP with an electric utility sample, RP with a natural gas utility
15 sample, and Allowed RP, one with the actual yield on a 30 year Treasury bond of 4.8
16 percent and the other is based on a forecasted yield on the 30 year Treasury Bond of
17 5.4 percent. Dr. Morin's estimated yield on the 30 year Treasury bond is based on the
18 60 basis point difference between the current yield on the 10 year Treasury bond and
19 a forecasted yield on the 10 year Treasury bond. He adds the 60 basis points to the
20 current yield on the 30 year Treasury bond.

1

2 **Q Why do you disagree with Dr. Morin's use of the yield on the 30 Year Treasury**
3 **bond?**

4 A I disagree with his use of the yield on the 30 year Treasury bond because the US
5 Government no longer issues that type of security and, as a result, secondary market
6 data and forecasts are not always available. Dr. Morin demonstrates this shortcoming
7 by relying on the actual yield and forecasted yield on the 10 year Treasury bonds
8 when he calculates his forecast for the yield on the 30 year Treasury bond. Moreover,
9 he states this shortcoming in his response to OCA data request Q-OCA-024. (See
10 Attachment MLS-4).

11 **Q Do you disagree with Dr. Morin's other methodologies?**

12 A Yes, when applying the DCF model to estimate the return on equity, Dr. Morin uses
13 three different samples (Moody's Electric, Vertically Integrated Electric, and Natural
14 Gas Distribution) and for each sample he calculates a rate of return on equity using
15 Zacks forecasts and the other set using Value Line forecasts. Relying solely on
16 earnings forecasts implies that investors are not concerned about dividends, which is
17 an incorrect assumption about investors' behavior. In fact, Dr. Morin seemingly
18 contradicts his own advice. For example, in his own text book he states that
19 dividends should be given a significant weight in the DCF model because "DCF
20 theory states that it is expected future cash flows in the form of dividends that
21 constitute investment value."¹³ Although earnings per share can be expected to

¹³ Morin, Roger, (1994) *Regulatory Finance*, page 141.

1 influence the market's dividend growth expectation, they should not be relied upon to
2 the extent that Dr. Morin does.

3 **Q Why do you believe that earnings should be given less weight when estimating**
4 **the growth rate in the DCF model?**

5 A There are numerous reasons why earnings should be given less weight. Earnings
6 growth may change for many reasons whether from changes in accounting practices
7 or the business cycle and, as a result, earnings growth rates may be influenced by a
8 particularly bad year. Lately, investors are becoming more skeptical of reported
9 earnings due to recent accounting practices involving both major corporations and
10 their auditors and, as a result, investors' confidence in financial reporting is eroding.
11 For instance, American International Group, Inc. recently admitted to improper
12 accounting practices and the investment community is questioning why
13 PricewaterhouseCoopers LLP did not notice such violations.¹⁴

14 **Q Why do you disagree with Dr. Morin's heavy weight on forecasts in particular?**

15 A Dr. Morin asserts that he relies on forecasts because they also incorporate historical
16 information. However, brokers, such as Zacks and Value Line, typically consider
17 their forecast formulae proprietary, so it is difficult to know what is actually
18 incorporated in these estimates. (See Attachment MLS-5, Company response to Q-
19 Staff-012) Moreover, investors suspect that there is a systematic upward bias in
20 brokers' and analysts' estimates. There is little incentive for brokers to place a "sell"
21 recommendation on a stock and they usually avoid lowering their recommendation

¹⁴ Weil, Jonathan "AIG's Admission Puts the Spotlight on Auditor PWC", *The Wall Street Journal*, April 1, 2005.

1 until after something bad has happened. As a result, investors are relying less on
2 these estimates. For instance, Scott Black, president of Boston money-management
3 firm Delphi Management, recently told *the Wall Street Journal* that he often does his
4 own research and considers analysts' reports as "promotional literature."¹⁵ Other
5 investor guides have also warned investors to proceed with caution when relying
6 solely on analysts' forecasts.¹⁶

7 **Q Why do you disagree with Dr. Morin's additional risk premium of 40 basis**
8 **points to his 11 percent return on equity to account for the risk associated with**
9 **PSNH's generation plants?**

10 A I disagree with Dr. Morin's additional risk premium of 40 basis points because the
11 risk premium that is associated with PSNH's generation plants is already incorporated
12 in the parent's stock price and, as a result, he double counts the risks specific to
13 PSNH's generation plants. Assuming that the efficient market hypothesis holds, the
14 stock market would have incorporated any information about the alleged risks
15 associated with PSNH's generation plants and valued the parent's stock accordingly.
16 Actually, the value of NU's stock incorporates investors' perception of all risks
17 associated with PSNH's and its affiliates. For instance, on March 9, 2005, NU
18 announced that it will explore ways to divest NU Enterprises, Inc's competitive
19 energy services business because it is unable to attain profit margins necessary to
20 generate acceptable returns and cash flows. (See Attachment MLS-6) Moreover,
21 before this announcement was official, credit rating agencies such as Standard &
22 Poor's gave PSNH a higher credit rating than NU. (See Attachment MLS-7)

¹⁵ Browning, E.S. "Analysts Keep Misfiring With 'Sell' Ratings", *The Wall Street Journal*, April 11, 2005.

1 **Q Why else do you disagree with Dr. Morin's 40 basis point additional risk**
2 **premium?**

3 A According to Dr. Morin, his 40 basis point risk premium adder is intended to
4 compensate PSNH for the following series of risks that generators face in a
5 restructured electricity market: increased competition from alternatives, increased
6 bargaining power of customer, stranded costs and exposure to wholesale electric
7 prices. In addition, Dr. Morin asserts that this 40 basis point adder serves to
8 compensate PSNH for risks specific to PSNH's generation plants, such as increased
9 regulatory oversight of PSNH's generation, the FERC re-licensing process for
10 PSNH's hydroelectric plants and the recovery mechanism for the Northern Wood
11 Project. I will address each type of risk in turn.

12 **Q Why do you feel that the risk Dr. Morin identifies with a restructured industry is**
13 **unwarranted in the case of PSNH's generation plants?**

14 A Increasing customer bargaining power and the threat of substitutes have been part of
15 the electric utility business long before restructuring. For instance, PSNH has been
16 negotiating special contracts with large commercial and industrial customers for
17 many years.

18 **Q Compared to other restructured states, what is the status of restructuring in**
19 **New Hampshire?**

20 A In contrast to some of New Hampshire's neighboring states, there has been very little
21 customer migration to competitive supply even in franchise areas where utilities have
22 divested their energy supply portfolios. Moreover, PSNH customers have had the

¹⁶ www.investorguide.com/igustockanalyst.html

1 opportunity to switch to competitive energy supply since Competition Day on May 1,
2 2001, but very few customers have switched.

3 **Q Compared to other electric utilities in New Hampshire, how is PSNH unique?**

4 A PSNH is mandated to keep its generation assets in order to meet transition and default
5 service load at a price that covers its power production and procurement costs. Other
6 utilities in New Hampshire have divested their energy supply portfolios and acquire
7 electricity supply from competitive electricity providers at prices set by the market
8 via a competitive bidding process. In contrast, PSNH still owns its generation assets.
9 Since PSNH's transition and default service rates are set to recover power production
10 and procurement costs, these rates have been less than market rates. As a result, few
11 customers have migrated to competitive supply. Given that few PSNH customers
12 have switched to competitive supply, PSNH does not face the competition that Dr.
13 Morin identifies as risk.

14 **Q Do you believe that the risks Dr. Morin identifies as specific to PSNH generation**
15 **exist?**

16 A No, the risks Dr. Morin associates with PSNH's generation plants are no different than
17 generation owned by vertically integrated electric utilities. Re-licensing hydroelectric
18 plants is an issue that all hydro plants face if they decide not to shutdown after their
19 license expires.

20 Dr. Morin also states that increasing fuel costs and transportation costs merit an
21 additional risk premium. I disagree because PSNH recovers these costs through
22 transition and default service rates that are adjusted annually. Moreover, PSNH has

1 the opportunity to initiate a transition and default service rate case in mid-year, if it
2 finds that revenues and costs are falling out of line.

3 **Q What other risks does Dr. Morin refer to as unique to PSNH generation plants**
4 **that you disagree with?**

5 A Dr. Morin states that the recovery mechanism developed as part of the Northern
6 Woods Project creates risk. The “recovery mechanism” is actually an incentive
7 mechanism in which PSNH has the opportunity to recover all of the costs associated
8 with the project. Moreover, the project has public support and draws in revenue from
9 the sale of renewable energy certificates (REC) and pollution abatement allowance in
10 addition to revenue from the sale of power. Since this project was approved by the
11 Commission in DE 03-166, there has been a shortage of supply and consequently, a
12 significant increase in the going price per REC and allowance. PSNH also benefits
13 from the positive public image it receives from The Northern Woods Project. PSNH
14 has marketed this project as being beneficial to the local environment, contributing to
15 the local wood market, and increasing the fuel diversity of New Hampshire.¹⁷ These
16 marketing efforts attract investors who care about a company’s environmental and
17 renewable energy stewardship. All of these factors help to mitigate the risks that Dr.
18 Morin perceives exist with the project

19 **Q Please summarize your critique of Dr. Morin’s methodology.**

20 A Dr. Morin overestimates the return on equity that investors expect for PSNH’s
21 generation plants. In his methodologies, he relies on data that does not reflect
22 investors’ expected returns. Moreover, he proposes an additional risk premium adder

¹⁷ <http://www.psnh.com/Energy/EnergyProject/NWPP/economy.html>

1 after deriving results with his CAPM, RP and DCF methodologies to account for risks
2 associated with PSNH's generation plants. Dr. Morin believes that PSNH's
3 generation plants face substantial risk associated with a restructured electric utility
4 industry. In his analysis, Dr. Morin overlooks New Hampshire's unique
5 circumstances as a state in which customers have not migrated to competitive supply.
6 He also fails to address the importance of the recovery mechanisms that allows PSNH
7 to recover the production costs associated with transition energy service. Finally, Dr.
8 Morin fails to address the key role that the stranded cost recovery mechanism plays in
9 giving PSNH the opportunity to recover costs associated with costs not recovered
10 through transition energy service charges.

11 **Section IV: Recommendation**

12 **Q What do you recommend for the allowed return on equity for PSNH's**
13 **generation assets?**

14 **A** I recommend that the Commission authorize a return of equity of 9.08 percent.

15 **Q Does this conclude your testimony?**

16 **A** Yes.

17